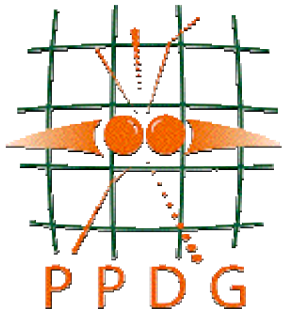
Particle Physics Data Grid Collaboratory Pilot

Quarterly Status Report of the Steering Committee, March –June 2003

27 July. 2003



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1 Project Overview

This particular quarterly report will be more condensed than usual. Most information is available from the presentations at the DOE SciDAC review in April and the All Hands meeting in June. For this particular quarterly report only, we will not include specific team reports.

The Project is currently planning for Year 3 towards being able to complete documented plans by the end of July.

- The SciDAC review presentations and summary are at http://www.ppdg.net/mtgs/review-apr03/agenda.html
- The All Hands Meeting presentations are at http://www.ppdg.net/mtgs/bnl-9jun03/index.html

1.1 Main Achievements of the Quarter

As noted above, we are including only the main achievement for each team in this quarterly report. In the next quarter we will go back to the usual longer team reports.

1.2 ATLAS

Athena Reconstruction using the GriPhyN Chimera system, in collaboration with GriPhyN, iVDGL and US ATLAS: Installed and tested (with Chimera) the Globus RLS software at two U. Chicago nodes. Tested and validated the virtual data services provided by Chimera in support of Atlas reconstruction efforts. Chimera testing. Constructing, testing, and validating an initial set of Pacman packages based on Chimera+RLS+VDT-Client to support ATLAS persistent grid challenges/Joint testing of the latest Chimera functionality for discovery and reporting of compute pool services prior to application execution. Joint development with Chimera developers on interoperability extensions to support both US and EDG Grids.

1.3 BaBaR

Development work in BdbServer++ for TierA -> TierC data distribution to use SRB BaBar Metadata catalog. Testing of and feedback to SRB from experience using SRB in production (or close to it). Continued development of Virtual Smart Card software.

1.4 CMS

Extensions to the Grid Analysis Environment software including incorporation of authorization into the Clarens distributed analysis framework and continued development of SOCATs for the efficient transfer of large relational datasets within the GAE framework. Integration of Mc_RunJob, a powerful grid workflow manager used to manage the generation of large numbers of production processing jobs, with MOP/Impala.

1.5 Condor

Completion of core components for first JIM deployment. Support of D0, CMS, ATLAS use of condor components. DAGMan development adding dynamic DAG support, classad-based DAG representation. Release of production version of Condor using extensions developed for D0.

1.6 D0

Initial deployment and testing of JIM in production for DØ and CDF. Addressing many fabric related configuration issues, as well as data output sandboxing towards actual use of the software for simulation data processing. JIM is being installed at a handful of sites in the US and Europe.

1.7 Globus

Release of GT 2.4 – includes fixes for over 55 bugs and release of GT3 beta release in June. Alpha version of modified Globus Tool security libraries that allow for callout to local or VO authorization services to replace or augment normal Globus Toolkit authorization. The callout was designed with PPDG-SiteAAA WG and allows development of a callout to support VOMS group membership assertions in CMS. Support of CAS as a VO group server at LBNL

1.8 JLAB

Continued development and testing of SRM v2.x - sufficient for distributed data analysis, detector & theory simulation. Production use of grid based file replication system between several sites.

1.9 SRB

Release of version 2.0.0 and 2.1.0 of the Storage Resource Broker. Support for server-initiated parallel I/O streams, bulk registration, bulk data access, metadata access controls. Development of a WSDL/SOAP interface. Integration of GSI version 2.2. Improved use of checksums, status, and restart on file transport. Continued work with BaBar.

1.10 SRM

Used HRMs at BNL and LBNL to support daily production file replication of 100-1000s of files in a single request. Continued coordinating and writing specification of SRM version 2. Participating in inter-operation tests of SRM-based systems. GGF BOF on storage resource management.

1.11 STAR

Deployment of production version distributed job scheduler with STAR job management framework and use by the experiment. Initial developments of Condor-G based job scheduling, and continued gridification and replication of mysql based catalogs and experiment monitoring systems.

1.12 Follow up to the Reviewers report

Reviewers report: *"Collaboration with other grid efforts is excellent :Have established PPDG within the Grid Ecosystem! Trillium is working! Worldwide leadership role in getting standards adopted by experiments. Productive cross-disciplinary cooperation is difficult to achieve; you have done an excellent job in this area: Physicists and Computer Scientists working for common goals is an important part of the project. Significant progress in delivering working grid software to experiments is evident. PPDG impact on grid software is tangible: Hardening; Extending tools to meet real world requirements.*

Planning is done at the team level without a clear overarching vision: need to do better job setting priorities. leadership somewhat diffuse .Software quality and robustness is perceived to be poor by the experiments; project is all about delivering production quality software.

Authentication in grids is an important challenge that must be addressed…somewhere, somehow.

Manpower is spread too thin. Distributed management hinders focused effort. As the landscape changes more focus will be required to have impact. Troubleshooting is a "lost child". Spreading the effort to address this across experiments and teams may not be effective. Need to provide a process to insure the quality of delivered software

Management structure: Focused top-down approach to address high priority elements such as trouble-shooting. PPDG milestones need to be clearly delineated.

Reach out to other sources (in NC program & outside DOE) to develop strategies for solving problems where you have insufficient resources to solve yourself, like authentication/troubleshooting. Plan for a five year project with concrete milestones: High value opportunities beyond present scope"

We are responding to this by:

- Establishing closer collaboration with the DOE SG project, especially at LBNL and ANL. We see fruitful areas of increased collaboration in areas of support for authorization, monitoring, and operations. We are also inviting a Bill Johnston to be an additional liaison to the project.
- Making project and team plans for Year 3 of the project that include milestones and manpower estimates.
- Focusing the project on a few specific, and high priority areas of work: Job Management, Data Management, and Production Systems. Additionally AAA and Grid Analysis Environments remain important focus areas.
- Increasing the commitment and time of the Executive Team to follow up on projects, status and milestones.

- Planning to discuss Year 4 and 5 plans after the Year 3 plans are done.

1.13 Follow up to the Questionaires

Experiments:

PPDG identifiable contributions to your Experiment goals to date – each experiment team is working on defining Year 3 contributions to the experiment.

Where should PPDG concentrate its efforts during the next year and a half – identified focus areas of work in data movement and management, job management and scheduling, production grid systems and grid based data analysis.

Have the computer scientists better understood your computing requirements – we are increasing the cross-project attention to regular communication between the computer science groups and experiments through cross-project coordination meetings for job scheduling, data movement and production grids to start August 1.

Issues with the support of the (PPDG) technologies you are deploying – robustness and hardness of s/w at all levels continues to be a concern. Moving to have all experiment use a common middleware packaged layer in common with LCG, GriPhyN, iVDGL – that is the Virtual Data Toolkit.

Computer Science:

Is Progress as planned in the PPDG proposal – addressing broad scope of PPDG work areas to a few focus areas for Year 3 to have the ability to more easily prioritize and provide effort for key areas of need.

What work is needed for the next year of PPDG – focus on data management and movement, job management and scheduling, production system grids and grid enabled data analysis.

At the end of PPDG do you think the technology will be mature and robust enough – At the end of the 3rd year of the SciDAC project the GT2 based technology should be robust. It is clear that a transition to web services (GT3 based) will be needed over the next few years. One can imagine that some hardening of this new round of technologies and implementations will occur.

Issues with the support of the technologies being deployed – there is still significant cause for concern because the projects funding the core grid technologies of Globus, Condor, SRM and SRB have finite lifetimes that are shorter than those of the experiments.

2 Meetings

- All hands meeting in June http://www.ppdg.net/mtgs/bnl-9jun03/index.html
- Steering meeting at BNL in June http://www.ppdg.net/mtgs/bnl-9jun03/index.html
- Grid Analysis Environment Workshop, Caltech, June 2003
  http://pcbunn.cacr.caltech.edu/gae/workshop_agenda.html
- GGF 8 Working Groups http://www.gridforum.org/Meetings/ggf8/default.htm
- GriPhyN/iVDGL Education and Outreach Meeting
  http://www.griphyn.org/events/view_agenda.php?id=57
- PPDG Review http://www.ppdg.net/mtgs/review-apr03/agenda.html

3 Single Team Reports

The links are to All Hands Meeting presentations, or archived mail of individual effort reports.

ATLAS team reports	John Huth	
Individual Report: Malon	David Malon	ppt
Grid-enabling MySQL	Sasha Vaniachine	ppt
DIAL and Datasets	David Adams	ppt html
My work and plan on Magda	Wensheng Deng	ppt
My Work on PPDG/ATLAS	Jerry Gieraltowski	ppt
Individual Report at PPDG All Hands meeting	Dantong Yu	ppt
BaBar team reports	Richard Mount	
My PPDG work @ SLAC	Adil Hasan	ppt
My work on PPDG at BaBar	Wilko Kroeger	ppt
CMS team reports	Lothar Bauerdick	
HENP Networks, Grids and UltraLight	Harvey Newman	ppt
Work on remote analysis in CMS	Conrad Steenberg	ppt html
GAE Converters and SOCATS for PPDG	Eric Aslakson	ppt
Personal Efforts Related to PPDG	Saima Iqbal	ppt
	Anzar Afaq	ppt
	Suresh Singh	html
D0 team reports	Lee Lueking	ppt
status	Igor Terekhov	ppt
Individual Report	Andrii Baranovski	ppt
D0-PPDG: the SAM-Grid Project: V2	Gabriele Garzoglio	ppt
STAR team reports	Jerome Lauret	ppt
individual report	Gabriele Carcassi	ppt
GSI-Enabling MySQL	Rich Cassela	ppt
monitoring	Efstratios Efstathiadis	ppt
Individual Report	Eric Hjort	ppt
Thomas Jefferson Lab team reports		
Jefferson Lab (Intro)	Chip Watson	ppt
JSRM Developments	Ying Chen	ppt
Jefferson Lab Experiment support and PPDG	Bryan Hess	ppt
Globus ANL team reports		
PPDG and Globus (updated)	Jenny Schopf	ppt
Condor team reports		
All Hands Tue AM Individual Report	Peter Couvares	ppt
	Alan DeSmet	ppt
SRM team reports		

Storage Resource Management work at LBNL	Alex Sim	ppt
Event Selection Manager: Enabling File-Transparent Event Access From The Grid	John Wu	ppt
SRB team reports	Reagan Moore	ppt
IEPM Effort report	Les Cottrell	html
Job management - plans for next year		
STAR job management - scheduler	Gabriele Carcassi	ppt

4 Documentation

4.1 CHEP2003

Plenary Talks

Miron Livny **Grid middleware and prospects on high level of standardization**

[abstract][paper][presentation]

Ian Foster **Open grid services Architecture**

[abstract][paper][presentation]

Dane Skow **Site security in the grid era**

[abstract][paper][presentation]

Parallel Session Talks

Iosif Legrand et al **MonALisa: A Distributed Monitoring Service Architecture**

[abstract][paper][presentation]

Rich Baker et al **GridMonitor: Integration of Large Scale Facility Monitoring with Meta Data Service in Grid Environment**

[abstract][paper][presentation]

W. Kroger et al **Distributing BaBar Data using the Storage Resource Broker (SRB)**

[abstract][][presentation]

T. Adye et al **Use of the European Data Grid software in the framework of the BaBar distributed computing model**

[abstract][paper][presentation]

Stefan Stonjek et al **The SAMGrid Testbed: First D0 and CDF Experiences with Analysis on the Grid**

[abstract][paper][presentation]

Paolo Capliluppi et al **Running CMS Software on Grid Testbeds**

[abstract][paper][presentation]

Conrad Steenberg et al **The Clarens web services architecture**

[abstract][paper][presentation]

Igor Terekhov et al **Grid Job and Information Management for the FNAL Run II Experiments**

	[abstract][paper][presentation]
Lee Lueking et al	**Dzero Regional Analysis Center Concepts and Experience**
	[abstract][paper][presentation]
Jerome Lauret et al	**Using distributed resource in STAR. An overview of our tools and architecture.**
	[abstract][paper][presentation]
Reagan Moore et al	**Applying data grids to support distributed data management**
	[abstract][paper][presentation]
Bob Cowles et al	**Results of Particle Physics DataGrid Site Requirements on Authentication, Authorization, and Auditting Project**
	[abstract][paper][presentation]
Rich Baker et al	**A Model for Grid User Management**
	[abstract][paper][presentation]
Craig Tull et al	**Using CAS to Manage Role-Based VO Sub-Groups**
	[abstract][paper][presentation]
Vijay Sekhri et al	**Site Grid Authorization Service (SAZ) at Fermilab**
	[abstract][paper][presentation]
Andy Hanushevsky et al	**Mechanisms to Secure x.509 Grid Certificates**
	[abstract][paper][presentation]
Dane Skow et al	**Kerberized Certificate Authority (KCA) use at Fermilab**
	[abstract][paper][presentation]
David Alexander et al	**Interactive Data Analysis on the Grid with JAS and Globus**
	[abstract][paper][presentation]
Conrad Steenberg et al	**Clarens client and server applications**
	[abstract][paper][presentation]
Arie Shoshani et al	**Experience with Deploying Storage Resource Managers to Achieve Robust File replication**
	[abstract][paper][presentation]
Wensheng Deng et al	**Magda - Manager for Grid-based Data**
	[abstract][paper][presentation]
David Adams et al	**DIAL: Distributed Interactive Analysis of Large datasets**
	[abstract][paper][presentation]
Kaushik De et al	**Experience with ATLAS Data Challenge Production on the U.S. Grid Testbed**
	[abstract][paper][presentation]
Alex Sim et al	**Storage Resource Management in the Grid Environment**
	[abstract][paper][presentation]
Les Cotrell et al	**High Performance Wide Area Network Testbed: Experiences and Results**
	[abstract][paper][presentation]
Warren Mathews et al	PIPE Dreams - Trouble Shooting Network Performance for Production Science Data Grids

[abstract][paper][presentation]

Poster Presentations

Eric Aslakson et al	**SOCATS (Stl based Object Caching And Transport System)** *[abstract]*
Dantong Yu et al	**The Design of High Performance Data Replication in the Grid Environment for the STAR Collaboration** *[abstract]*
Saul Youssef	**WorldGrid: A World-Wide Grid Interoperability Project** *[abstract]*
E. Antonioli et al	**Using Grid for the Production of Monte Carlo Events in the BaBar Experiment** *[abstract]*
Gabriele Carcassi et al	**The STAR Scheduler Project.A Job submission tool for distributed resource environment.** *[abstract]*
Ed May et al	**Grid Deployment and Infrastructure Monitoring on the U.S. ATLAS Grid Testbed** *[abstract]*

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4.2 Other Papers and Presentations

Grid Security Efforts, Bob Cowles, BaBar grid Workshop - Karlsruhe, 04 April 2003

Tutorial titled "Grid Security", Bob Cowles, Dane Skow, DOE Security group training Conference 2003, Baltimore, April 2003

Mechanisms to Secure x.509 Certificates, Bob Cowles & Andrew Hanushevsky, EDG CA Managers meeting, CERN, 13 June 2003

"ABWE: A Practical Approach to Available Bandwidth Estimation", Jiri Navratil, Les Cottrell, SLAC-PUB-9622, published at PAM 2003.

"Measuring end-to-end bandwidth with Iperf using Web100", Ajay Tirumala, Les Cottrell, Tom Dunigan, SLAC-PUB-9733, published at PAM2003, April 2003.

"pathChirp: Efficient Available Bandwidth Estimation for Network Paths" Vinay Ribeiro, Rudolf Reidi, Richard Baraniuk, Jiri Navratil, Les Cottrell, SLAC-PUB-9732, published at PAM 2003, April 2003.

"Experiences and Results from a New High Performance Network and Application Monitoring Toolkit", Les Cottrell, Connie Logg, I-Heng Mei, SLAC-PUB-9641, published at PAM 2003, April 2003.

""An Implementation of the GGF NMWG Profile Document", Warren Matthews and Les Cottrell, presented at GGF8, Seattle, June 2003.

"State of Network Monitoring and Analysis in the US", presentation by Les Cottrell at the LSN meeting, Washington, June 10, 2003.

"Achieving Record Speed Trans-Atlantic End-to-end TCP Throughput" presentation by Les Cottrell at the NANOG meeting Salt Lake City, June '03.

"IEPM-BW." Presented by Warren Matthews at the UCL Networking Monitoring Infrastructure Workshop, May 2003.

"Quantifying the Digital Divide", presentation by Les Cottrell to the ICFA-SCIC group, May 2003.

"CENIC Road to Ten Gigabit: Biggest, Fastest in the West Award speech" invited talk given by Les Cottrell at the CENIC 2003 meeting, Santa Barbara May 2003.

"FAST TCP for Multi-Gbps WAN: Experiments and Results" given by Les Cottrell at the Spring Internet2 Members Meeting, Washington April 2003

"Quantifying the Digital Divide", presented by Warren Matthews at the Internet2 Spring Members Meeting, Arlington, VA, April 2003, at the Hard to Network Places BOF.

"Measuring End-to-end Bandwidth with Iperf using Web100", presented by Warren Matthews at the Internet2 Spring Members Meeting, Arlington, VA, April 2003, at the PIPES/Web100 joint session.

"Breaking the Internet2 Land Speed Record: Twice", presentation by Les Cottrell at Ricoh and Network Physics, April 2003

"PIPE Dreams", presented by Warren Matthews at CHEP03 in San Diego, March 2003.

'BaBar and the Grid'. Presented by Adil Hasan at HEP data grids at KEK March 10-11 2003

“The SAM Replica Management System” presented to the EDG workshop at Barcelona by Lee Lueking, May 2003

5 Collaborations

5.1 Trillium.

Members of PPDG work as part of the VDT testers group which provides testing software for and validation of new versions of VDT before they are released. Several experiments are working with GriPhyN collaborators on virtual data, workflow, job planners and optimization techniques.

5.2 Grid3

Grid3, http://www.ivdgl.org/grid3/, a joint project with iVDGL, GriPhyN, US ATLAS and US CMS software and computing projects, aims to build a grid environment to:

- Provide the next phase of the iVDGL Laboratory
- Provide the infrastructure and services need for LHC production and analysis applications running at scale in a common grid environment
- Provide a platform for computer science technology demonstrators
- Provide a common grid environment for LIGO and SDSS applications.

5.3 DOE Science Grid Collaboratory.

We have started further discussions on collaboration in the following areas:

- VO management: We are developing a plan that meets needs of Nuclear Physics experiments in PPDG.
- Proxy generation / credential repository: Discussing with SLAC Virtual Smart CARD (VSC) and FNAL KCA essentially provides these services. ESnet CA group (Tony G., et al) are planning to run these type services (MyProxy, CAS), and discussing issues with Dave Kelsey of LCG/EDG.
- Monitoring for grid-level job scheduling: We are discussing more of the details.
- Trouble ticket exchange / incident response: Activity started between DOESG & iVDGL. Lead by Dave Coweley, PNNL for DOESG & Steve Peck, IU for iVDGL. Initial effort involves trouble ticket systems at DOESG sites, ESnet CA and iVDGL.

5.4 Global Grid Forum

The PPDG Steering Committee endorsed the proposed Particle and Nuclear Physics Applications Research Group (PNPA-RG). This group held a Bird's of a Feather at GGF8, and proposes a workshop at GGF10 in Frankfurt in March. The charter is included as an appendix to this report.

5.5 HICB, JTB, Glue

Two JTB phone meetings were held to review and discuss the Joint Testing and Packaging projects. The GLUE scheme work continued with new versions of the Compute Element and Storage Element schema being released. Versions of the EDG information providers were delivered to LCG-0 and VDT. Work continued on the Network Elements in collaboration with IEPM-BW, PPARC, DataTAG and the GGF.

6 Additional Experiment Collaborators

The three experiments below made presentations to the PPDG Steering Meeting in June 2003. Following these presentations we encouraged CDF and PHENIX to collaborate on Year 3 Plans with other experiments (D0, STAR and ATLAS). Members of these experiments remained for the PPDG All Hands meeting and certainly added value to our discussions. We plan to invite representatives of these experiments onto the Steering Committee.

6.1 ALICE

It is anticipated that DOE Nuclear Physics will request & receive proposals to participate in LHC Heavy Ion program over next few months. ALICE-USA computing plans are listed in a white paper from Dec. 2002 describes activities on: AliEn, AliRoot. Data Challenges, and Collaboration technologies. Interaction with PPDG is expected on integration of VDT with AliEn and interactive analysis using PROOF. We should aim at September for clarifying details of participation in PPDG, and interactions/load on CS teams.

6.2 CDF

PPDG related activities are in collaboration with D0 at Fermilab: SAM-Grid: D0/CD/CDF joint project; SRM interface to dCache/Enstore to be used by SAM: Co-scheduling of CPU & data (based on Condor); VO management; Improved user interfaces & monitoring. Longer term issues include: Need Improved analysis tools support and are starting to collaborate with MIT-Phobos on Proof. There is a collaboration within PPARC e-science in collaboration with ATLAS on distributed databases over the grid.

6.3 PHENIX

PHENIX has ~300 TB of data and an active, distributed analysis community. Active use of large data set at BNL Linux farm, RIKEN Linux farm, and IN2P3 in Lyon plus smaller facilities. Remote event reconstruction, DST analysis, simulations. Real data and a large community of users (50-100) - code developers and consumers for data analysis. Experiences with replica management (ARGO), metadata. give opportunity to study scalability, latencies, performance. Need for large-scale (testing of) distributed job submission Plan developments jointly with STAR and ATLAS at BNL.

7 Appendix

7.1 List of participants

TEAM	Name	F	Current Role CS	Systems and Production Grids	Job Mgmt	Data Mgmt	AAA	Grid Analysis and Catalogs	Other: Web Services, Evaluations Interoperation, etc.
Globus/ANL	Ian Foster	Y	Globus Team Lead, GriPhyN PI, iVDGL, GriPhyN			x			
	Mike Wilde	N	GriPhyN coordinator	x		x			
	Jenny Schopf	Y	GriPhyN, iVDGL, Globus team liason, ATLAS-CS liason	x		x			x
	Willliam Allcock	Y	GridFTP	x		x			x
	Von Welch	Y	CAS				x		
	Stu Martin	Y		x	x				
ATLAS	John Huth	N	ATLAS Team lead, GriPhyN Collaborator	x					
	Torre Wenaus	N	LCG Applications liason		x	x		x	
	L. Price	N	Liaison to HICB, HICB Chair						
	D. Malon	N	Database/POOL Liason					x	
	A. Vaniachine	N						x	
	E. May	N	Testbed applications	x		x			
	Rich Baker	N	Testbed applications, VO tools	x			x		
	Kaushik De	N	Testbed applications	x					
	David Adams	Y	Distributed analysis					x	
	Wensheng Deng	Y	Metadata catalogs			x		x	
	R. Gardner	N	IVDGL coordinator, Atlas Grid Tools		x	x			x
	G. Gieraltowski	Y	Interoperability	x				x	x
	Dantong Yu	Y	Monitoring and VO	x			x		
BaBar	Richard Mount	N	PPDG PI, BaBar Team co-Lead						
	Tim Adye	N	BaBar Team Co-Lead						
	Robert Cowles	N					x		
	Andrew Hanushevsky	Y				x			
	Adil Hassan	Y				x			
	Les Cottrell	N	IEPM Liaison	x					
	Wilko Kroeger	Y				x			
CMS	Lothar Bauerdick	N	CMS Team Lead. GriPhyN collaborator						
	Harvey Newman	N	PPDG PI. GriPhyN collaborator, Co-PI iVDGL						
	Julian Bunn	N	CMS Tier 2 manager, GriPhyN & iVDGL collaborator	x				x	
	Conrad Steenberg	Y	CS-8:Analysis Tools, GriPhyN collaborator					x	x
	Iosif Legrand	N	CS-8:Monitoring Tools						x
	Vladimir Litvin	N	GriPhyN collaborator		x				

	James Branson	N	CMS Tier 2 manager	x					
	Ian Fisk	N	CMS Level 2 CAS manager, iVDGL liaison	x					
	James Letts	Y	Working on VDT testing scripts	x					
	Eric Aslakson	Y	job execution, grid monitoring	x	x				
	Saima Iqbal	N	web technology evaluation					x	
	Suresh Man Singh	N	grid deployment	x					
	Anzar Afaq	Y		x	x			x	
	Greg Graham	N		x	x			x	
Coordination	Ruth Pordes	Y	PPDG coordinator			x			
	Doug Olson	Y	PPDG coordinator			x	x	x	
	Miron Livny	Y	PPDG coordinator		x	x	x	x	
	Josepg Perl	Y	CS-11 co-coordinator					x	
	Craig Tull	Y	CS-6 Robust File Replication Common interface specification			x			
D0	Lee Leuking	N	DO PPDG liason	x	x				
	Igor Terekhov	Y	JIM Team Lead	x	x				
	Andrew Baranovski	Y		x					
	Gabriele Garzoglio	Y		x	x	x			
	Parag Mhashilkar	Y	Through contract with UTA CSE Department	x	x				
	Vijay Murthi	Y	Through contract with UTA CSE Department	x	x				
HRM/LBNL	Arie Shoshani	y	SRM Team Lead. GriPhyN collaborator			x			
	Alex Sim	Y				x			
	JunminGu	Y				x			
	Alex Romosan	Y				x			
SRB/UCSD	Reagan Moore	Y	SRB Team Lead. GriPhyN collaborator			x			x
	Wayne Schroeder	Y	CS-8: Web Services			x			x
JLAB	William Watson	Y	JLAB Team Lead			x			x
	Sandy Philpott	N	facilities	x			x		
	Andy Kowalski	N				x			
	Bryan Hess	Y	Web Services			x			x
	Ying Chen	Y	Web Services	x		x			x
	Walt Akers	N	Web Services	x		x			
STAR	Jerome Lauret	N	STAR Team Lead	x	x				x
	Gabrielle Carcassi	Y		x	x				
	Dave Stampf	N		x					
	Richard Casela	N		x					
	Eftratios Efstathiadis	N		x					
	Eric Hjort	Y		x		x			
	Doug Olson	N		x		x			x
Condor/U.Wisconsin	Miron Livny	Y	PPDG PI, PPDG Coordinator. GriPhyN collaborator	x	x	x			x
	Peter Couvares	Y			X		x		

	Rajesh Rajamani	N			x				x
	Alan DeSmet	Y			x		x		
	Alain Roy	N			x				
	Todd Tannenbaum	Y			x				
Globus/ISI	Carl Kesselman	N	Globus/ISI lead						
	Ann Chervenak	N				x			

7.2 GGF Particle and Nuclear Physics Research Group Charter

DRAFT Charter for GGF Research Group on Particle and Nuclear Physics Applications (PNPA)

The Particle and Nuclear Physics Applications Research Group provides a forum for discussion of issues related to particle and nuclear physics applications and production grids. There are three specific goals, all with the overarching aim of ensuring that HENP actively participates in setting requirements and defining standards to ensure that its needs are met and to bring its experiences in deploying and using large scale grids to the grid community as a whole.

- To bring the requirements of the HENP community to the GGF in order to explain and inform the wider grid community of the specific needs and issues of HENP
- To ensure participation of the HENP community in grid standardization efforts, particularly in those areas and services essential to the successful use of grids in HENP.
- To provide early feedback to GGF technical working groups on the success or failure of various grid software components as used in high performance production activities by HENP experiments.

The particle and nuclear physics community has over the past few years provided the driving applications and made significant contributions to several projects (EDG, DataTAG, PPDG, GriPhyN, SiteAAA, iVDGL, Nordugrid) that have been actively involved in developing and deploying prototype, and now production, grid applications. Many of the participants in these projects are active participants or leaders of existing or new GGF working groups or research groups. Current areas of interest include security, high throughput data transport, data intensive management and access services, and information schema definition. As the community continues to develop and adopt higher level and more comprehensive services it is anticipated that we will contribute to other areas of work such as production and operations services, scheduling and job description, databases, frameworks and applications, and network and resource management.

The PNPA Research Group will provide a venue to bring together domain application scientists together with the information technologists and researchers in grid technologies, at the leading forum for standards. HENP experiments are deploying petascale production grids now. We aim to identify the requirements of, and communicate experiences from, these deployments as they relate to the GGF. We believe there are important commonalities in requirements across the experiments in the field which can be collected and documented as a common set.

Members of this Research Group will include representatives of the LHC Computing Grid, Trillium, and other grid projects in the field. These projects must deliver and deploy production grid middleware and services to enable scientific analysis on a global scale. The research group will also ensure that grid developments driven by the larger projects within HENP will also be compatible and useable by other experiments within HENP.

Scope:

The scope of this research group will include the following:

- Communicate areas of GGF work relevant to the community and vice versa. Propose mechanisms for the community to participate in existing, or propose new, working groups or research groups.
- Identify clear examples of the diverse use of the grid within the particle and nuclear physics community. This includes issues of access to, and archiving of, petascale datasets, services for virtual sub-organizations in a global community, and intelligent management of workflows and scheduling of a complex mix of petaop jobs needed by our community.
- Discuss state of standards, within the community and between the community and other application domains.
- Explore possible reference architectures for the community's distributed grid applications.
- Identify how the grid is being challenged by the particle and nuclear physics sciences, and communicate these requirements in the GGF forum.
- Promote issues related to production, operations and maintenance.

Action Items:

- Hold workshops at GGF meetings of varying length (from 1 hour to 1 day) and different focus areas related to the activities in the field, for communication and discussion of the ongoing program and plans of the community.

Deliverables:

1. An informational document that defines the requirements of the HENP community at this time from GGF WG and RGs - Initial draft Mar 2004.
2. An initial informational document directed to grid designers and users in the HENP community summarizing GGF standards and recommended practices that could be adopted to HENP computing problems – Initial draft summer 2004
3. An initial informational document (or series of documents) that relates the Application Area experiences to date to the goals and scope of the GGF – August 2004.

Goals/Milestones:

1. GGF8 (June 2003): BOF Discussion of the Research Group charter
2. GGF10 (Mar 2004): _ day workshop which includes presentations and discussion of the program of the area.
3. GGF10 (Mar 2004): Meeting of RG to discuss initial draft of the informational document on Requirements of the HENP community for Grid Services.
4. June 2003-March 2004: Actively present the charter and engage the community of particle and nuclear physicists and obtain endorsements.
5. Review the activities and relevance of the Research Group June 2004
6. Review the activities and relevance of the Research Group June 2005